
In the Supreme Court of the United States

OCTOBER TERM, 1938.

THE SCHRIBER-SCHROTH COMPANY,
Petitioner,

vs.

THE CLEVELAND TRUST COMPANY,
CHRYSLER CORPORATION,
Respondents.

No. 3.

THE ABERDEEN MOTOR SUPPLY
COMPANY,

Petitioner,

vs.

THE CLEVELAND TRUST COMPANY,
CHRYSLER CORPORATION,
Respondents.

No. 4.

THE F. E. ROWE SALES COMPANY,

Petitioner,

vs.

THE CLEVELAND TRUST COMPANY,
CHRYSLER CORPORATION,

Respondents.

No. 5.

ON WRITS OF CERTIORARI TO THE UNITED STATES CIRCUIT
COURT OF APPEALS FOR THE SIXTH CIRCUIT.

**RESPONDENTS' MOTION (1) TO EXPAND THE
ITEMS REMANDED TO THE COURT OF APPEALS
AND TO AMEND THE ORDERING CLAUSE OF THIS
COURT ACCORDINGLY AND (2) TO MAKE CERTAIN
CORRECTIONS IN THIS COURT'S OPINION OR, IN
THE ALTERNATIVE,
A PETITION FOR REHEARING.**

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Now Comes the respondent in the above entitled
cause and moves this Court (1) to amend the ordering
clause occurring at the end of this Court's opinion, dated

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November 7, 1938, handed down in these causes; and (2) to consider what seem to respondent to be errors in the opinion, either as they affect further proceedings below, or in the alternative, as they justify rehearing thereon.

The ordering clause of this Court's opinion in these causes, dated November 7, 1938, is as follows:

"As the Court of Appeals did not pass upon other questions in the case, the causes will be reversed and remanded to it for further proceedings, in conformity with this opinion, with respect to such claims of the patents in suit as appellant below submitted to that court for adjudication."

I. We pray the Court to supplement this ordering clause by adding to the matters remanded to the Court of Appeals, partly to clarify, expedite and simplify the further proceedings there, the following:

(A) "but if the Court of Appeals did not read 'web flexibility,' 'laterally flexible' webs, or any other elements into any of the claims of either the Gulick or the Maynard patents ruled upon, as this Court, has assumed that the Court of Appeals did, then the Court of Appeals shall, after so declaring, review such claims on the assumption that such elements are not in such claims; and if the Court of Appeals did read such element or elements into any such claim or claims, then the Court of Appeals is directed to reconsider the question of patentability of such claim or claims without reading such element or elements into such claim or claims."

and

(B) that the Court of Appeals, in the further consideration of the causes by that Court, apply to the prior art the same rules on sufficiency of dis-

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closure that this Court has applied to the Maynard patent in its opinion of November 7, 1938, and that the Court of Appeals thus review the prior art without restriction by what this Court has said about any item of the prior art.

II. We pray that this Court further consider those points in the opinion which we point out in Part II of this Motion, as seeming to us erroneous, and thereupon either modify appropriately the instructions for further hearing below, or in the alternative, grant a rehearing thereon.

FOREWORD.

Upon the questions which respondent understood to be presented by the petition for certiorari and which respondent's counsel argued fully, respondent does not feel justified in asking a general rehearing on those questions; but the cases are remanded for further consideration by the Court of Appeals, and it is hoped that the extent of that further consideration is not foreclosed by any implications from the opinion of this Court,—hence the perhaps unusual character of this application.

It seems that we should call attention, in a preliminary way, to a particular feature of the opinion which may seem to this Court of importance, as affecting the further proceedings. The Court selected claim 39 of the Gulick patent for discussion, so that the language of that claim served more or less as the basis upon which the Court reached its conclusions. *Claim 39 was not in suit and had never been presented to or considered by the Court below.* It differs materially from the claims which were in suit.

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PART I.

(A) This Court said at the end of its opinion and just preceding the ordering clause, as follows:

"We assume that it [meaning the Court of Appeals] sustained claim 1 of the Gulick patent which makes no mention of web flexibility, only by reading into it that element, which the Court regarded as an essential part of the invention."¹

It has always been the rule that an element cannot be read into a claim.

This Court early stated the rule as follows, to quote the syllabus, in the early case of *McCarty v. Lehigh*, 160 U. S., 40 L. Ed. 358:

"An element not mentioned in a claim for a patent cannot be read into the claim for the purpose of making out a case of novelty or infringement."

Since the Sixth Circuit Court of Appeals has followed this rule even in very recent decisions, many of which were written by Judge Sions, the same Judge who wrote the opinion in the instant causes (see *Smith v. Petroleum*, 73 F. (2d) 531, 536; *Wadsworth v. Westinghouse*, 71 F. (2d) 850; *Chicago v. Bade*, 63 F. (2d) 928; *Cincinnati v. English & Mersick*, 18 F. (2d) 542, 543), may not the Court of Appeals rightly feel that it should not have been thought to have read the web, flexible or otherwise, into claim 1 of Gulick, or to have read any element into any other claim in suit, where such element was not already in the claim, or rightly feel that

¹ To much the same effect are other statements in this Court's opinion such as that in the beginning of the same paragraph from which the last sentence was quoted and which is as follows:

"we construe the Court's opinion as including the laterally flexible webs as an essential element in the patented combination."

it really intended to hold the claims valid as they are and without reading any element into them?

Suppose, therefore, that the Court of Appeals *did not* read, or did not intend to read, the web or "web flexibility" or "laterally flexible webs" into claim 1 of the Gulick patent, for example. Should the Court of Appeals now be bound to assume that it *did* read the web or the web flexibility into claim 1 because this Court assumed (and, by hypothesis, erroneously) that the Court of Appeals had done so, or is it not more appropriate that the Court of Appeals be at liberty to proceed on the basis (by hypothesis, the true basis) that it *did not* intend to read that element into any of the claims?

To state the matter summarily, the Gulick and Maynard patents contain the following three kinds of claims:

- (1) claims such as claim 1 of Gulick, which do not specifically recite any "web" at all,
- (2) claims such as the claims of Maynard, and Gulick claims 11, 12, 13, 15, 18, 30, and 33, the other Gulick claims ruled upon by the Court of Appeals, which recite the webs, but do not recite the flexible feature of the webs, and
- (3) claims like claim 39 of Gulick which were not in suit, but which recite both the webs and the flexible feature of the webs.

Only claims of the first two groups were presented for consideration and review in the Court of Appeals and it was only such claims that were considered. If the Court of Appeals read the web into the first group, or read the flexible feature of the web into the second group as an element, then that Court violated the rule of *McCarty v. Lehigh*. If the Court of Appeals did disregard that rule, then it seems to us that it should

be reversed *for so doing*, and be directed to reconsider the claims without reading elements into the claims in violation of the rule of this Court in *McCarty v. Lehigh* and the practice established thereby and followed since.

If the Court of Appeals followed *McCarty v. Lehigh* and did *not* read the web into the first group of claims and did *not* read the flexible property of the web or a flexible web element into the second group of claims, as this Court has assumed it did, then would not the Court of Appeals rightly feel that it should have an opportunity so to declare, and then to consider the claims as they read, and unembarrassed by any supposed "reading in" of the flexible feature of the web element?

In other words, as the matter stands, the respondent has had no review of the issue which was presented to the Court of Appeals¹ (the validity of the claims as they read), unless this Court is wrong in assuming that the elements were read into the claims by the Court of Appeals and, in that event, this Court has reversed the Court of Appeals on something that the Court of Appeals did not rule upon.

The matter is of special importance here, as this Court has ruled against respondent because of "lack of disclosure," in the specification, of matter which is not included in any claims passed upon by the Court of Appeals, and the claims thus ruled upon by that Court were based upon and justified by the original disclosure (Gulick and Maynard). No claim passed upon by the Court of Appeals contained or was based upon the mat-

¹ See reference to Claims 18 and 33 on p. 19, *infra*, which did not include web flexibility.

ter which this Court has found was not disclosed in the original specifications.

Would not the Court of Appeals rightly think that it would know whether or not it had read such elements into such claims, though in violation of the rule of *McCarty v. Lehigh*, well known to and practiced by that Court? *Is it not reasonable, under the circumstances, and from the viewpoint of the Court of Appeals that it should have the opportunity to say whether or not it had departed in the instant causes from the rule of McCarty v. Lehigh and its established and common practice of following that rule?*

A second assumption made by this Court regarding the holding of the Court of Appeals, as we understand this Court's opinion, was that the Court of Appeals regarded "the lateral flexibility of the webs" to be "the only feature mentioned not within the prior art or within the expected skill of the art" (see p. 5 of this Court's opinion). We respectfully urge that the Court of Appeals did not predicate patentable invention upon the novelty or lack of novelty of any one element of the combination, and that the Court of Appeals did not look upon any one element as the main point and gist of the invention; but rather that the Court of Appeals regarded the invention as residing in the whole combination of the various specified elements, whether individually old or new, and regarded the combination of elements defined in the claims passed upon as the essential thing constituting invention, as indeed the Court of Appeals said.

That this was the real view of the Court of Appeals seems to follow from its statement (92 F. (2d) 333):

"The Gulick patent is for a combination of elements, many, if not indeed all of which, are to be found in the prior art. Nowhere, however, is found his precise organization, and the question at once presents itself as to whether there was exercise of the inventive faculty in the concept of their combination, for that a new result was achieved and a new mode of operation of an aluminum piston in its iron cylinder brought about is not successfully challenged on this record."

Not only was this view the one taken by that Court in the instant causes, but it had consistently so held in a long line of decisions, some of which are written by Judge Simons, and some by other Judges who sat in these causes below. In so ruling, the Court of Appeals has followed the rule early established by this Court (*Loom Company v. Higgins*, 105 U. S., 580; 26 L. Ed., 1177) and followed by this Court throughout (*Expanded Metal v. Bradford*, 214 U. S., 366; 53 L. Ed., 1034) to the effect that a new combination of old elements may be patentable no matter whether all of the elements are old, whether all but one are old, and whether part are old and part are new (*National v. Richardson*, 63 Fed. (2) 292; *International v. Remington*, 78 Fed. (2) 606 and *Monarch v. Dennison*, 92 Fed. (2) 90).

Moreover, that Court has consistently held and recently definitely reannounced that no one element in such a combination constitutes the invention or contributes novelty to the combination, but that it is the combination that constitutes the invention and that is novel. In other words, as has long been the rule, the combination of the elements makes a new thing that is separate and distinct from the individual elements of the

ombination. (*Automotive Parts v. Wisconsin*, 81 Fed. 2) 125, 126).¹

Should it be assumed that the Court of Appeals did not follow these rules of law in the instant causes? Does not its opinion rather indicate that in the instant causes it regarded the combination of elements recited in the claims as *the new thing*, regardless of the novelty or antiquity of any of the elements taken individually, and that it found these combinations patentable because of the history of the inventions, their achievements, the new results and the new mode of operation obtained by the combination of elements defined in the claims sustained?—as indeed that court carefully and expressly said. Do not the statements made by Judge Simons on pages 334 and 335 of 92 Federal Reporter (2d) sufficiently establish these conclusions?

Be these things as they may, is it not reasonable that the Court of Appeals should be permitted to say whether it regarded the inventions of the patents in suit to be found solely in the web flexibility,—the flexible web,—or rather in the combination of elements recited in the claims sustained?

This question of the patentability of the claimed combinations was not presented to this Court by the petition,

¹ Judge Moorman, speaking for the Court (Moorman, Simons and Allen) said:

"The invention is for a composite thing, embracing several elements or parts, all of which are necessary to and cooperate in the operation of the patented unit. We cannot subscribe to the view that the test of contributory infringement in the furnishing of parts for a combination invention is whether the parts furnished constitute the gist or essence of the invention; indeed, we cannot see how it may be said that any one element or another marks the advance step or is the essence of such an invention."

and has never been duly brought before this court.¹ It becomes apparent upon a consideration of the opinion of the Court of Appeals that this question was determined by that Court only after a careful consideration of voluminous testimony regarding history, operations and achievements, as well as careful consideration of the patented and the prior art structures; and is it not true that such question cannot fairly be considered without a full consideration of this evidence?

*At all events, is the situation so urgent that the Court of Appeals must be finally and forever assumed to have violated both of the cardinal rules of *McCarty v. Lehigh and Loom Company v. Higgins*, or should that Court be given an opportunity to make clear, whether it did or did not so violate these rules,—especially when for years that Court has been consistently and carefully following these two rules so promulgated by this (the Supreme) Court in these two cases?*

Moreover, since the causes are remanded to the Court of Appeals for further proceedings, these matters, we submit, should be clarified since they also bear upon the other subject-matter to be considered on the remand.

(B) As this Court said at page 2 of its opinion, the Courts in the District of Columbia relied upon the rule of sufficiency of disclosure followed in the "interference proceedings" which we will here call for short and for better convenience the "liberal rule"; at the same place, this Court found that the Master relied upon the rule of sufficiency of disclosure stated in the decisions of this Court in *Permutit v. Graver* and *Powers v. Concrete*,

¹ It was expressly disclaimed by petitioner's counsel on the oral argument.

which we will here call for short and for greater convenience the "strict rule."

The Court of Appeals used the first or "liberal rule" in its interpretation of the disclosures of both (1) the prior art and (2) the patents in suit. (Where we refer to the disclosure of the Gulick patent in this connection we mean the disclosure without the 1922 amendment.)

This Court rejected the application of the "liberal rule" to the patents in suit, reversed the Court of Appeals and the District of Columbia Appellate Courts and applied the "strict rule" to the patents in suit; on the other hand, this Court accepted the Court of Appeals' interpretation of the prior art which had been under the "liberal rule."

It results that the matter now stands decided with the patents in suit interpreted by the "strict rule" and the prior art interpreted by the "liberal rule."

This is wrong; both must be interpreted by the same rule, i.e., the "strict rule" under this Court's decision.¹

¹ That the requirements for sufficiency of disclosure in the prior art are the same as for the patent in suit was early established and has since been followed by this Court.

In the *Cawood* patent case, 94 U. S. 695, this Court, speaking through Mr. Justice Strong, said (p. 704):

"That, however, evades the question to be answered, which is, whether the specification was sufficient to enable a mechanic skilled in mechanical arts to construct and carry into practical use the Cawood machine; or, in other words, whether whatever is essential to the Cawood machine could be read out of the prior specification. We think no such information was given by the English patent."

In *Seymour v. Osborne*, 11 Wallace, 516, this Court, speaking through Mr. Justice Clifford said (78 U. S. 555):

"Patented inventions cannot be superseded by the mere introduction of a foreign publication of the kind though of prior date,

For example, the Ebbs patent 700,309 (R. p. 1673), and the Long patent, 1,872,772 (R. p. 1773) are as barren of description of "flexibility of the skirt" which this Court considered to be disclosed by them (p. 4 of this Court's opinion) as the patents in suit are barren of description of "flexibility of webs,"—indeed more so. (See Appendix A and the cut adjacent the back cover of this brief.)

The Van Bever patent 1,031,212 (R. p. 1681) is likewise barren of description of flexibility of the skirt in the completed piston. It is true that this Van Bever patent refers to "spring capacity," but only in connection with the piston in its intermediate or incompleated stage.

unless the description and drawings contain an exhibit a substantial representation of the patented improvement, in such full, clear and exact terms as to enable any person skilled in the art or science to which it appertains to make, construct and practice the invention to the same practical extent as they would be enabled to do if the information was derived from a prior patent. Mere vague and general representations will not support such a defense, as the knowledge supposed to be derived from the publication must be sufficient to understand the nature and operation of the invention, and to carry it into practical use. Whatever may be the particular circumstances under which the publication takes place, the account published, to be of any effect to support such a defense, must be an account of a complete and operative invention capable of being put into practical operation. *Web. Pat. Cas.* 719; *Curt. Pat.* (3d ed.), sec. 278, a; *Hill v. Evans*, 6 Law. T., N. W., 90; *Betts v. Menzies*, 4 Best & S., Q. B., 999."

In *Downton v. Yeager Milling Company*, 108 U. S. 466; the rule was reaffirmed, to quote the syllabus:

"The doctrine reaffirmed that the earlier printed and-published description of a subject of a patent which is put in evidence to invalidate a patent must be in terms that would enable a person skilled in the art or science to which it appertains to make, construct and practice the invention as completely as he could do by the aid of information derived from a prior patent; and that unless it is sufficiently full to enable such person to comprehend

When completed, the "spring capacity" is so locked as to destroy all flexibility.

All of the other art discussed or mentioned by this Court and the Court of Appeals is barren of description of "flexibility of the skirt," unless that feature can be imported into the disclosure of such prior art patents through such words and phrases as appear in the descriptions of the inherently flexible webs of the patents in suit. (A more complete discussion of this subject is found in the Appendix A.)

None of the drawings of these prior art patents show dimensions, so that the drawings may not be resorted to

it without assistance from the patent, or to make it or repeat the process claimed, it is insufficient to invalidate the patent."

In *Eames v. Andrews*, 122 U. S. 40, the rule was followed (p. 66):

"The same rule was repeated by Mr. Justice Strong in the opinion of the court in *Cohn v. United States Corset Co.*, 93 U. S. 366, 370, as follows: 'It must be admitted that, unless the earlier printed and published description does exhibit the later patented invention in such a full and intelligible manner as to enable persons skilled in the art to which the invention is related to comprehend it without assistance from the patent, or to make it, or repeat the process claimed, it is insufficient to invalidate the patent.' This rule was affirmed in *Downton v. Yeager Milling Co.*, 108 U. S. 466, 471."

The rule expressed by this Court in the above authorities has not only been followed throughout the Courts of Appeals and the District Courts, but it has become textbook law (see *Walker on Patents*, Deller Edition, pp. 270-272). Thus Walker says (p. 270):

"Novelty is not negated by any prior patent or printed publication, unless the information contained therein is full enough and precise enough to enable any person skilled in the art to which it relates, to perform the process or make the thing covered by the patent sought to be anticipated."

This, as well as the quotations copied from the opinions of this Court, are merely paraphrases of the Statute R. S. 4888 which this Court paraphrased in almost the same language at page 7 of its opinion in the instant causes.

in order to supply the omission, any more than in the case of the patents in suit. Indeed, most of the drawings of these prior art patents appear to be more indefinite than the drawings of the patents in suit, since the evidence shows that the drawings of the patents in suit proved to be scale drawings and there is no evidence that these prior art patents show scale drawings. Each of the parties used the drawings of the Gulick patent and produced the pistons plaintiff's Exhibit 20 and defendant's Exhibit 3-T (R. pp. 155, 156, 192, 193, 255, 256, 240, 568, 860 and 863),—both of which have flexible webs.

Nor can any of the prior art be rescued from the application of the "strict rule" by any admission made during the trial that any of them embodies what their disclosures omit, for there are admissions equally binding that the patents in suit disclose "flexibility of webs" to those skilled in the art (R. pp. 155, 156, 201, 240 and 568).

What we have said about the absence of disclosure of "flexibility of skirt" in the cited prior art under the "strict rule" applies to nearly all of the items which the Court of Appeals mentioned in discussing the Gulick invention at 92 Fed (2) 334, quoted by this Court at page 5 of its opinion and relied upon for the assumption that web flexibility must be read into the claims in suit.

We have analyzed this discussion and itemized the features recited therein. They are as follows:

"But to combine";

- (1) "insulation of head from skirt"
- (2) "retraction of the bosses from the skirt periphery"
- (3) "connection of such bosses to the skirt with webs laterally flexible and"

- (4) (connection) "yet so carried from the head as to support the load upon the wrist pin with sufficient strength and rigidity and"
- (5) "to utilize the mechanical force of the cylinder wall upon the skirt"
- (6) "and" (to utilize) "the thermal expansion of the bosses so as to compensate evenly and fully for head expansion and"
- (7) "to secure a balanced flexibility of the skirt with no bending concentration at any point therein."

Except for item (1), which is disclosed in the text of the Spillman & Mooers patent, we find none of these items disclosed in any of the prior art patents to Ebbs, Van Bever, Franquist, Spillman & Mooers or in the subsequent Long Patent 1,872,772 of 1932, unless resort be had to the drawing or to the knowledge of the art, that certain properties would be inherent, to import them into one or more of such patents. Item (2) might be found in the Spillman & Mooers patent by referring to the drawing thereof, but there is nothing in the specification to support its presence. Item (5) might be imported into the Franquist disclosure to a degree too limited to be successful, as the record shows, if Franquist were favored with a liberal interpretation of language, now denied to Gulick and Maynard as we show in Appendix A. Items (3), (4), (6) and (7) are not only not found in these patents, but cannot be found there even if resort be had to the drawings and to any knowledge of the inherent properties of metals.¹

¹ The combination of the elements or features cannot be found in any prior art disclosure even though resort might be had to drawings and inherent properties. Nor was it within the skill of the art as the many

When we come to Maynard we find that not only is what we have said about the Gulick items true, but the additional items named by the Court of Appeals as employed by Maynard, which are as follows:

- (a) "webs about two-thirds of the length of the skirt"
- (b) omitted the skirt for the length of the webs
- (c) continued the skirt "circumferentially below the webs except for a single vertical slot throughout one bearing face of the skirt" (92 Fed. (2) 337)

are not to be found in the prior art cited by the Court of Appeals and this Court. Not only are they not disclosed in the specifications, but neither resort to the drawings nor to the knowledge of what is inherent in the constructions of such art justifies their importation into any item of this prior art, by either the "strict" or the "liberal" rule.¹

Therefore, in common parlance, each of the prior art patents referred to by this Court and by the Court of Appeals "is in the same boat" with the patents in suit,

¹ The combination of the elements or features cannot be found in any prior art disclosure even though resort might be had to drawings and inherent properties. Nor was it within the skill of the art as the many efforts and failures in this country and abroad, not only by engineers but by mechanics skilled in the art amply establishes, as described by the Court of Appeals at 92 Fed. (2) 334 and 335 and throughout the record. As petitioner's expert said, "There was a crying demand for an aluminum piston that would work with a minimum clearance." (R. p. 458.)

(Continued from p. 15.)

efforts and failures in this country and abroad, not only by engineers but by mechanics skilled in the art amply establish, as described by the Court of Appeals at 92 Fed. (2) 334 and 335 and throughout the record. As petitioner's expert said, "There was a crying demand for an aluminum piston that would work with a minimum clearance." (R. p. 458.)

and since the rule is that "sauce for the goose is sauce for the gander" the "strict rule" must be applied to the prior art as well as to the patents in suit.

Since the causes stand remanded by this Court to the Court of Appeals on other questions, and since we have never had a review by the Court of Appeals of these causes on the basis of the "strict rule," we have, as an alternative to applying for a rehearing, made this motion to remand this question to the Court of Appeals along with the other questions already remanded to that Court and to which this question is closely allied. In doing this we have partly been actuated by a realization that it can, perhaps, be more economically and expeditiously done by the Court of Appeals which is already familiar with the prior art and need only reconsider it in connection with the "strict rule" of interpretation.¹ Moreover, it is apparent that at least some of this prior art, if not all of it, must be reviewed by the Court of Appeals in connection with the other questions already remanded to it.

We have adopted this course notwithstanding it makes it necessary for us in effect to ask this Court to tell the Court of Appeals to disregard this Court's statements regarding the prior art in this Court's opinion. We make this request with all deference; nevertheless, we are confident that this Court would not want the Court of Appeals to read "flexibility of the skirt"² into such patents as the Ebbs patent when, under the "strict rule," "flexibility of the web" cannot be read into the patents in suit. The disclosure of the Ebbs patent is to be found at page

¹ The Court of Appeals considered the prior art in connection with the question of invention, a question admittedly not before this Court.

² Or other feature.

1673 of the record. We invite the Court to consider the one page which embodies the whole disclosure. It will be readily seen that not only is "flexibility of the skirt" not disclosed, but it is not even contemplated.

The matter is important since only by applying the "liberal rule" and by thus importing matter into the prior art, could it be assumed that the disclosures of the prior art were sufficient to impose on the patented claims the limitations which result from reading in "flexibility of web." If the "strict rule" is applied to the prior art the matters imposing those limitations on the claims in suit are not found in the prior art. Therefore, if the "strict rule" is applied to the prior art, as well as to the patents in suit, the claims in suit are valid without reading "web flexibility" into them.

Even assuming that there could be any dispute on this question, it is a question which has never been reviewed by the Court of Appeals and should be considered by it.

We, therefore, ask this Court to direct the Court of Appeals to reconsider the claims of the patents in suit, applying the "strict rule" to each of the prior art patents, as well as to the patents in suit.

PART II.

Suggested Corrections in the Opinion.

- (a) The Court says at the end of the first full paragraph on page 4:

"Reference to the means, the webs, connecting the head to the split skirt as being 'yieldable' in response to lateral cylinder wall pressure appear in claims 18 and 33."

The term "yieldable," appearing in claims 18 and 33, applies to the skirt and not to the webs, as we read the

claims and as we understand that they have been read. The only place where the term "yieldable," or its equivalent, is used in either of these claims is in the following language.

In claim 18:

"whereby said piston *skirt* is rendered yieldable during operation in response to cylinder wall pressure" and in claim 33, after defining the *skirt* as having "oppositely positioned main bearing portions" the claim concludes:

"and the other main bearing portion being separated from the head and split longitudinally between its connections to the bosses to render said *slit main bearing portion* yieldable in response to pressure from the engine cylinder during operation."

(b) On the first page of its opinion of November 7, 1938 this Court said that

"Respondent is the assignee in trust, under a pooling agreement among a number of automobile manufacturers, of some eighty patents relating to pistons employed in internal combustion engines."

Only one automobile manufacturer is in the agreement; the others are individual inventors and makers of aluminum pistons. The sentence would be correct if it read:

"Respondent is the assignee in trust, under a pooling agreement among a number of individual inventors, a number of piston makers and one automobile manufacturer, of some eighty patents relating to pistons employed in internal combustion engines."

(c) This Court said at page 6 of its opinion:

"Neither drawings nor specifications give dimensions showing thickness or other proportions which might suggest a flexible structure."

and at page 9:

"As already indicated, the omission from the specifications was not supplied by the drawings, which fail to disclose by dimensions the proportions of the webs."

There are two ways of giving dimensions and proportions in drawings, as is well known. One way, and the less common way, is to place the figures indicating the dimensions on the drawings. This practice was followed, for example, in the early Gulick drawing (R. pp. 1862 and 1363) and in the drawing of Exhibit 22 (R. p. 1339).¹ The other way, and the more common way, is to make the drawings "to scale," as it is called, so that one who wishes to reproduce what is shown in the drawings merely has to measure the dimensions of the parts to get their finite and relative dimensions and the proportions and relations of the parts to each other (see Appendix B).

One advantage of the scale drawing over the merely dimensioned drawing is that when the drawing is a scale drawing, the disclosure may be reproduced in the actual shape and size illustrated in the drawing, and also may be halved, doubled, tripled, or made to any size by merely halving, doubling, tripling, or otherwise consistently modifying the measurements of the parts as shown when the parts are scaled. Each Gulick and Maynard shows a "scale drawing." The

¹ Indeed, the dimensioned Gulick drawing shown at page 1363 was before Gulick's solicitor at the time his application was prepared (R. pp. 860, 861, 864 and 868), but because it was a scale drawing the dimensions were omitted as unnecessary and because, to a certain extent, they "litter up" the drawing and make it less clear, especially when the reference numerals necessary to the description in the specification are added to the dimensioned drawings.

record shows that if one scales the drawings of either Gulick or Maynard and reproduces a piston on that scale, modified by any factor, no matter whether it be one-half, one, two, or other number, a piston will result which will operate successfully in an internal combustion engine to perform the desired functions, including flexing of the webs (R. pp. 155, 201, 568). Both parties did, by copying the Gulick drawings, make Gulick pistons which do what is claimed for the Gulick pistons (Exhibits 3T and 20 and R. pp. 155 and 240), while the record shows that millions of pistons like the Maynard drawing were made and used successfully (R. pp. 68, 71, 77, 78, 81, 88, 130, 132, 135, 462, 471 and 955).

We think it would be helpful in the further prosecution of this case in the Court below if this Court would say whether it is sufficient to follow the practice of showing scale drawings, or a drawing that can be scaled to produce the device, or whether the inventor must show the dimensions of the parts in his patent drawings.

If dimensions must be used, are those who followed the scale drawing practice in the past and did not show dimensions but, on the contrary, showed "scale drawings," to be penalized for doing so?

It follows that the matter is of general importance, as well as of special importance to these causes.

All we ask this Court to do, in Part I of this motion, is to give the Court of Appeals during the remanded proceedings an opportunity to say whether or not they have continued to follow this Court's rulings, and for leave to apply the same rule of interpretation to the patents in suit and the prior art alike.

Wherefore it is prayed that each of the foregoing motions be allowed.

PETITION FOR REHEARING.

Petition for Rehearing and in the event that any of our motions hereinbefore presented are denied, we pray this Court for a rehearing on the questions presented by the motions denied and for the reasons stated therein for the allowance of such motions, which reasons succinctly are as follows:

A.

(1) The Court of Appeals could not have read web flexibility, or the like, into any claim in suit, for to have done so would have violated a cardinal rule of patent law long since promulgated by this Court and always followed by the Court of Appeals even down to recent decisions written by Judge Simons himself.

(2) The Court of Appeals could not have predicated patentability upon web flexibility, or any other one element or feature of the novel combinations, for to have done so would have been to have violated a cardinal rule of patent law long since promulgated by this Court and always followed by the Court of Appeals even down to recent decisions written by Judge Simons himself and declared by the Court of Appeals to be followed in the instant causes (92 Fed. (2) 333).

(3) Even if scale drawings are no longer acceptable in patents, but must be dimensioned, the patent drawings which are scale drawings and included in the patents already issued should not be discarded, but should be relied upon since they have always been relied upon in the past and were relied upon when the patents in suit were issued.

(4) The "strict rule" of interpretation of a patent disclosure made by this Court in its opinion in these

causes and in *Permutit v. Graver* and *Powers v. Kennedy*, as now interpreted, should be applied to the prior art as well as to the patents in suit since it has always been the rule that the same rules of sufficiency of disclosure apply to both alike. As the case now stands, the "strict rule" has been applied to the patents in suit and the former "liberal rule" to the prior art. If the "strict rule" is applied to the prior art as well as to the patents in suit, the same end will be reached as was reached by the Court of Appeals in applying the "liberal rule" to each the patents in suit and the prior art, for the reason that if the "strict rule" is applied to the prior art there will be no prior art to impose upon the claims limitations requiring the reading of web flexibility into them.

B.

Is not the "strict rule" inconsistent with what is commonly and generally accepted in the art as a disclosure sufficient to teach those skilled in the art all the statutes require?

In view of the fact that the "strict rule" of disclosure which this Court has now made and upon which this Court stands is contrary, as the opinion of this Court says, to so many tribunals, including the three Courts of Appeals, we ask a rehearing that we may invite this Court to consider disclosures of pistons which those skilled in the piston art have considered to be such full, clear, concise and exact terms as to enable any person skilled in the art to construct and use a new piston, and what those skilled in the art considered to be a sufficient explanation of the principle of a piston and the best mode in which it is to be applied and how it is to be distinguished from other

pistons, to paraphrase the language of Section 4888, as this Court did at page 7 of its opinion.

The record contains a number of articles prepared by those skilled in the piston art and either read by them at engineering societies, or published in journals, or both, which articles were compiled for the purpose of disclosing the pistons there discussed in such full, clear, concise and exact terms for the purpose of teaching their readers or auditors to construct the pistons and which articles have explained the principles and the mode of using the pistons, etc. *In other words, we have here many practical demonstrations of what the piston art not only considers sufficient to disclose a piston, its principle, etc., but what has actually been sufficient for that purpose.*

We will take these up in order as they appear in the record. They are as follows:

(1) At page 1647 of the record there is an article by Harry R. Ricardo, B.A., A. M. I. C. E. No one can challenge the standing of Mr. Ricardo in the automotive industry. No one can challenge his skill in that industry or his knowledge of what constitutes a sufficiency of disclosure to those skilled in the piston art. An inspection of that article shows that his disclosure is more meager than the disclosures of the patents in suit. His drawings are not dimensioned and his descriptive matter contemplates resort to the drawing as sufficient. His drawings are no more elaborate than those of the patents in suit and his description is much more meager.

(2) At pages 1667 to 1669 of the record there is an article by the well-known automobile engineer, E. G. Gunn, which is reprinted in several automobile journals. *Mr. Gunn uses a little over two pages to illustrate and*

describe eleven different pistons. His drawings are not dimensioned though he relies largely upon the drawings for his disclosures. It is significant that he discusses a Long type of piston which has been said in these causes to have flexible webs. He considered it sufficient description to say that the piston of this type was allowed "to spring" without mentioning that the spring is due to the flexibility of the webs or is in the webs, or is in the skirt.

(3) There are two articles at pages 1827 to 1834 of the record describing machinery and including a description of pistons. Again drawings are relied upon. The only dimensions employed are shown at page 1828 and only the overall dimensions are given to show the size of the piston for a certain cylinder. Dimensions of wall thicknesses and such things are not given. These articles, like the Gunn article and the Ricardo article, are addressed to those skilled in the art and considered to be sufficient to disclose the pistons to those skilled in the art so as to enable the art to reproduce them and to realize their principles of operation.

(4) At pages 2229 to 2235 there are other articles published relating to pistons including the Spillman & Mooers piston. Again we find undimensioned drawings accompanied by description much more brief and barren of detail than the descriptions of the patents in suit, yet these are disclosures which the authors, who were skilled in the art, considered sufficient to convey to their readers, also skilled in the art, the information to enable them to reproduce the pistons and to take advantage of their principles of operation.

(5) At page 2271 of the record there is a publication by Mr. Long himself addressed to garagemen, mechanics,

engineers and others in the art for the purpose of explaining his piston to them and its principle of operation so as to induce them to employ it. It will be noted that Mr. Long relies largely upon an undimensioned illustration of his piston and that in order to explain the operation of the piston,—which is now thought by this Court to include web flexibility,—he considered it sufficient to tell the art that the piston permitted “expansion”—a word used by both Gulick and Maynard in their disclosures, but in more elaborate context. There can be no doubt that Long is skilled in the art, and that his disclosure was addressed to those skilled in the art, with the intention of informing them of the structure of his piston and how to operate it.

(6) At pages 2273 to 2275 of the record there is an article by a Mr. Walford, and addressed to those skilled in the piston art, where he describes a split type of piston, relying largely upon an undimensioned drawing. He did not consider it necessary to mention the fact that the portions of the piston would expand or that the material of which it was made was resilient; yet his purpose was to disclose to those skilled in the art his piston and its principles.

(7) Even more abbreviated are the disclosures by Sterling Products Corporation at page 1326 of the record and by Weems, the licensee of Long, at page 1621 of the record.

Each and every one of these disclosures was offered in this record by the petitioners, who urged that the disclosures were sufficient to teach those skilled in the art how to make the pistons illustrated and described in these articles and how to operate them to make their principles available to the public.

We, therefore, wonder if this Court would not, upon reconsideration, think that the former or "liberal rule," as we have called it, was more consistent with the actual facts and the practical side of the piston business and science than the "strict rule," and, further, and if this Court would not think that the "strict rule" was inconsistent with and more or less flies in the face of what the art considers to constitute a disclosure sufficient to those skilled in the art, as so amply established by the publications to which we have referred.

The authors of this brief are familiar with the literature on pistons made up of disclosures in textbooks, engineering society papers, read and discussed at engineering society meetings, articles published in scientific and trade journals, etc., such as are found in any modern science or art. We regard the articles appearing in the record in these causes which we have discussed above as typical of the literature and of what has not only been regarded by those in the art, but has been in experience found by those in the art, to be sufficient to disclose the pistons, their principles of operation and how to apply them. We do not believe that the literature of the piston science or the piston art contains a description that would conform to the rule made by this Court in its opinion in the instant causes.

WHEREFORE, it is prayed this Court grant a rehearing in the above entitled causes.

Respectfully submitted,

ARTHUR C. DENISON,

F. O. RICHEY,

WM. C. MCCOY,

Attorneys for Respondents,

November 30, 1938.

I certify that the foregoing Petition for Rehearing is filed in good faith and not for purposes of delay.

Wm. C. McCoy.

APPENDIX A.

The Ebbs piston (this Court's opinion, p. 4) not only does not describe "flexibility of the skirt," but the purpose for which Ebbs showed replaceable skirt portions did not contemplate flexibility in the skirt portions. All that Ebbs provided was skirt portions which could be removed when worn and new ones substituted. He contemplated no skirt flexibility and in the use for which his piston was designed there would have been no skirt flexibility (R. p. 945). We presume that it might be argued that since all metal is inherently flexible, the parts would have flexed if somebody had taken them out of the cylinder and put enough pressure on them to make them flex, but under the rule of this Court expressed in its opinion of November 7, 1938, this flexibility could not be imported into the Ebbs patent. Nor can any of the other seven items of Gulick or ten items of Maynard be read into Ebbs, if for no other reason than that they are not there disclosed under the "strict rule."

The Van Bever patent does not show "flexibility of the skirt." The most that Van Bever claims is that the skirt portions "have a certain amount of springing capacity." This "*springing capacity*" does not exist when the piston is completed; it is present only in the incompleated piston. It is employed only for the purpose of permitting the manual adjustment of the piston skirt when it is outside of the engine. The Van Bever piston, therefore, not only does not possess "flexibility of the skirt," but the "springing capacity" present in the incompleated piston does not contribute to automatic adjustment of the piston skirt to take care of the expansion and contraction. The Van Bever piston does not automatically contract and expand when in use; it is just as dead and as rigid as a trunk piston. The skirt does not flex when it is in use. It was merely intended to be flexed when the piston was taken out of the cylinder and adjusted by hand. The record further shows that the ad-

justing means was omitted from the Van Bever piston and that it was used in a cylinder in an attempt to make it flex and take care of the expansion and contraction taken care of by the pistons of the patents in suit. The record shows, however, that it would do no such thing, and, further, that it was incapable of flexing to do what is done by the pistons of the patents in suit and was given up as a failure (R. pp. 452, 546-548, 572 and 930). The principal testimony on this subject was given by defendant's expert who made the attempt and experienced the failure when he was an engineer and later the Chief Engineer of the Franklin Company (R. pp. 449 and 543). The seven other Gulick and ten other items of Maynard cannot be read into Van Bever, under the "strict rule."

At the threshold of the consideration of these questions, it must be remembered that there are various kinds of flexibility. For example, a springboard is flexible; so is a thread, but the kind of flexibility possessed by the thread would not serve in the springboard and the kind of flexibility in the springboard would not serve in the thread.

To import into the completed Van Bever patent flexibility that it does not possess and that the evidence shows it is incapable of possessing, would not only violate the rule laid down by this Court in its opinion of November 7, 1938, but would violate the long established cardinal rule of patent law that two things are not the same, even though a word can be discovered which describes them both, where the one is incapable of performing the offices of the other or performing those offices in the same way, such, for example, as the springboard and the thread, and the Van Bever piston and the patented pistons (See *Machine Co. v. Murphy*, 97 U. S. 120, 125).

The Franquist patent No. 1,153,902 does not disclose "flexibility of the skirt." If it attains flexibility it is only by virtue of undisclosed antithetical properties inherent in

the materials of which the piston is made and, even then, as we shall point out later, flexibility would be achieved by a different mode of operation and to a too limited extent to be commercially successful. It is true that the Franquist patent prophesies that the Franquist piston will be circumferentially compressible under the pressure of the cylinder wall and when the cylinder retires the piston will resume its normal size, just as Gulick, in his original specification, claimed that his piston would not "expand against the cylinder wall to such an extent as to seize or stick" and with not enough force "to cause the piston to stick in the cylinder." *Franquist no more describes the properties of the materials of which his piston is made whereby this can be done than Gulick did in his original specification.* Franquist says that his piston will operate by circumferential compression, just as Gulick says that his piston will not expand against the cylinder wall with too much pressure, but Franquist no more states what property of the metal he employs or the actual dimensions used which cause his piston to yield to circumferential compression than Gulick did in his original specification. In other words, Franquist depended upon flexibility to accomplish his purpose of yielding in response to circumferential compression and resuming the normal size when the pressure was relieved, just as Gulick is said to have depended upon flexibility of the web. There is no doubt that whatever flexibility is present in Franquist's skirt is antithetical for the same reason that flexibility in Gulick's web is antithetical. Franquist's skirt possessed rigidity if it possessed flexibility, just as Gulick's web did. The situations with respect to the Franquist skirt is precisely what this Court said about the Gulick web, and if Gulick's original disclosure was insufficient because he neglected to mention the inherent antithetical property of flexibility in his web through which aid was given to the

ability of the piston not "to expand against the cylinder wall to such an extent as to seize and stick," then by the same rule and measure the Franquist patent disclosure is insufficient for failure to state that it is through the antithetical property of flexibility that the skirt can yield to circumferential compression and resume its original position when the circumferential pressure is relieved. In addition to that we will point out that Gulick did operate as he claimed to produce a useful piston and Franquist did not.

What we have said about the comparisons we have made between Franquist and Gulick applies likewise between Franquist and Maynard. Maynard states that his structure "compensates for expansion and permits the skirt to conform to the cylinder," just as Franquist claims that his skirt yields to circumferential compression and then resumes its normal size when the pressure is relieved. *If the Maynard description is insufficient because it neglected to mention the inherent antithetical property of flexibility, through which the compensation to which he refers is aided, then the disclosure of Franquist is insufficient because he fails to do the same thing.*

It follows that the Franquist patent cannot be used to limit either the Gulick or Maynard claims in suit so that web flexibility must be read into them to make them valid.

Nor can Franquist's drawings any more rescue his disclosure from the ban than can the drawings of Gulick and Maynard, because neither the drawings nor the specification of Franquist "gives dimensions showing thickness or other proportions which might suggest a flexible structure" any more than Gulick or Maynard do.

Franquist cannot be rescued from this situation by the claim that it was demonstrated that his piston would be flexible if made according to the drawing because the same thing has been shown of Maynard and Gulick. Moreover, there is no evidence that anyone knew that Franquist was

flexible prior to the inventions of Gulick and Maynard, and there is ample evidence that both Gulick and Maynard were known to be flexible long prior to the infringement.

The Franquist patent contemplated expansion and contraction upon a different mode of operation called in the Franquist patent "circumferentially compressible" and in this record and in the opinion of this Court and in the opinion of the Court of Appeals as "the accordion principle." On this principle, as the record shows, only limited contraction and expansion could be realized and that limited expansion and contraction was insufficient to improve upon the ordinary trunk type of piston which was superseded by the pistons of the patents in suit because they did operate upon a different principle than that of Franquist and failed. Therefore, we say that under the ruling of this Court in its opinion in these causes, the accordion principle cannot be read out of Franquist and the cantilever principle be read in. We also say that there cannot be *imported into Franquist sufficient flexibility* to be commercially operative and successful when the record shows that the amount of expansion and contraction actually disclosed and realized is insufficient to be either commercially operative or successful. Franquist fails to disclose the other items of the Gulick and Maynard itemization under the "strict rule," as we have shown *supra*.

The Long Patents (this Court's opinion, p. 4) instead of disclosing flexibility, disclosed rigidity both in skirt and web.

The Long patent shows a plurality of skirt portions 6 each of which, as the specification of the Long patent 1,872,772 says, "is held in its peripheral position by an integrally formed connecting portion 10" (R. p. 1737, ls. 54 and 55) and "the separated portions 6 will be *rigidly* held against bending" (R. p. 1738, ls. 32 and 33). The only way in which these sections 6 can be rigidly held in this manner is by the

provision of rigid webs 10; in other words, in Long the webs 10 could not both bend and hold the portions 6 rigidly against bending as stated. Moreover, this declaration that these skirt portions are held against bending, negatives any claim that they bend in operation; *in other words, according to the Long specification neither the skirt portions nor the webs are flexible.*

These statements and the facts recited therein cannot be overcome by any claim that Long had his piston in commercial use early enough to be prior art to Maynard—though not to Gulick—on the theory that there was an admission that the Long web was flexible because it was never admitted that the Long web was flexible enough to flex in use.¹ Such a statement would not only have been contrary to the teachings of the Long patent, but it would have been contrary to the experience of the Franklin Company with the Long piston. The record shows that the Franklin Company had to give the Long piston .004" to .005" clearance, from which it is clear that it could not be used at .002" clearance. It was equally clear that the reason that it could not be used with less than .004" to .005" clearance was because the webs would not flex in use (p. 458). If they had flexed in use the piston could have been used at .002" clearance. For the reasons we have said *supra*, other features listed by this Court and the Court of Appeals in discussing Gulick and Maynard cannot be imported into any of the Long patents, under the "strict rule."

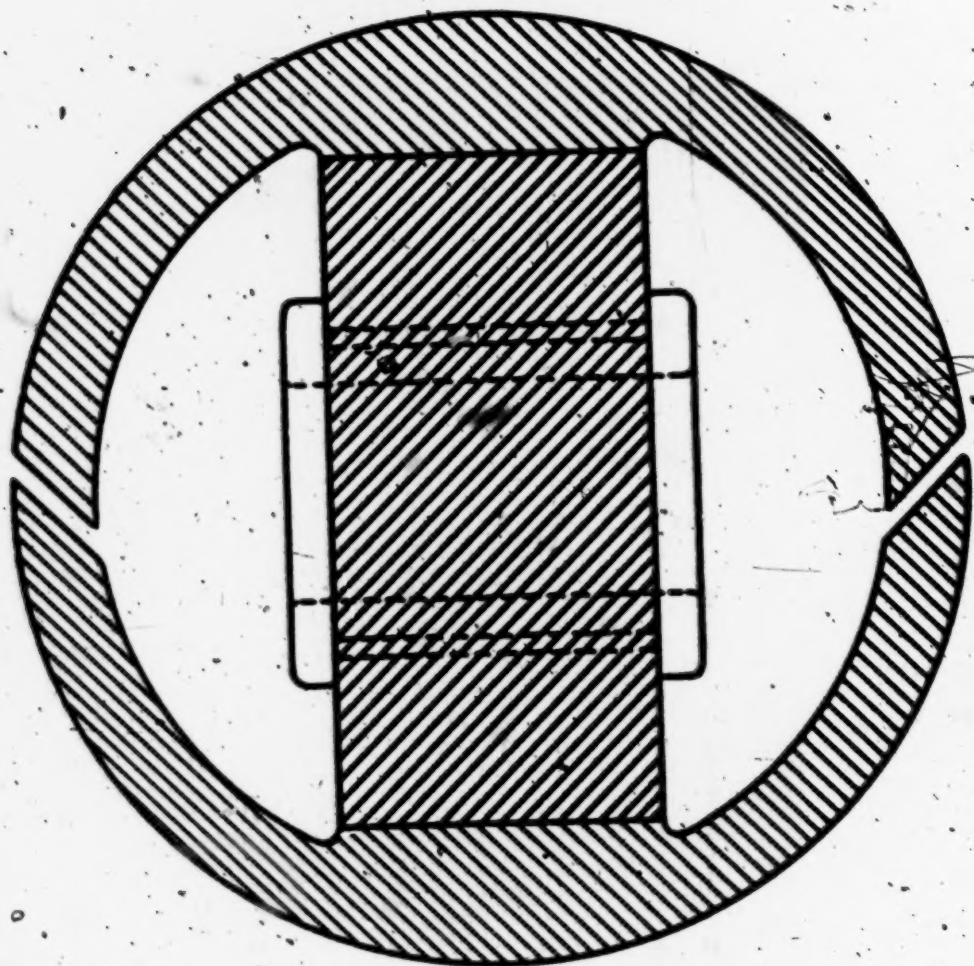
¹ If the failure of a prior art patentee to disclose inherent flexibility in his patent, or to recognize it in his structure, can be cured by an admission made after the patented inventions were made, that flexibility would be present, then the failure of the Gulick and Maynard patents to disclose the flexibility in their original disclosures is cured because there are admissions here that flexibility is present in their disclosures supported by proof of the fact and, in the case of the Maynard patent, by proof of the use of millions of his pistons. (R. pp. 201, 568, 578, 462, 471, 955.)

The only other prior art piston that was mentioned either by this Court or by the Court of Appeals in connection with the dissection of the combination claim into its individual elements was the Spillman & Mooers patent. The Spillman & Mooers patent does not say that the Spillman & Mooers skirt is flexible. Under this Court's rulings these terms could not be *imported into Spillman & Mooers* even if it were possible to have flexed either web or skirt in the Spillman & Mooers construction.

APPENDIX B.

The drawings of the patent in suit each are scale drawings. The shape and proportions of each part of the webs of both Gulick and Maynard pistons are clearly shown in the drawings together with the exact position of these webs in the piston structures. In Gulick, for example, the shape or form of the webs is shown in plan view in Fig. 1, the thickness of the webs is shown in edge view in Fig. 2, the thickness of the webs is again shown in sectional view in Fig. 3, and in the sectional view in the plane of the bosses in Fig. 4. No such complete and accurate showing of any piston structure of the prior art is found in this record. Any mechanic could exactly reproduce in the piston structure the relative size, the form, thickness, and all other proportions of these webs and each of the parties did reproduce the piston of the Gulick patent, including the webs, and each structure so reproduced by the parties has webs that are extremely rigid in the direction of the web and that are also laterally flexible, as may be determined by manually squeezing the pistons Exhibit 3-T (Petitioner's) or Exhibit 20 (Respondent's) to close the longitudinal slots in those pistons. The drawings of the Gulick piston are found at R. p. 284 and of Maynard at R. p. 300. For convenience the piston of the Gulick patent is reproduced in perspective from the patent drawings in the proportions of the patent and is shown in the plate at the back of this brief. Arrows "a" and "b" are applied to this drawing to show the directions of the "extremely rigid" web connection between the power-transmitting bosses 16 and the piston skirt that is "in addition to" the split skirt that will not "seize or stick." Arrow "c" shows the "lateral flexibility" described in the amendment and that permits the originally described operation of the split skirt.

MAIN THRUST BEARING FACE

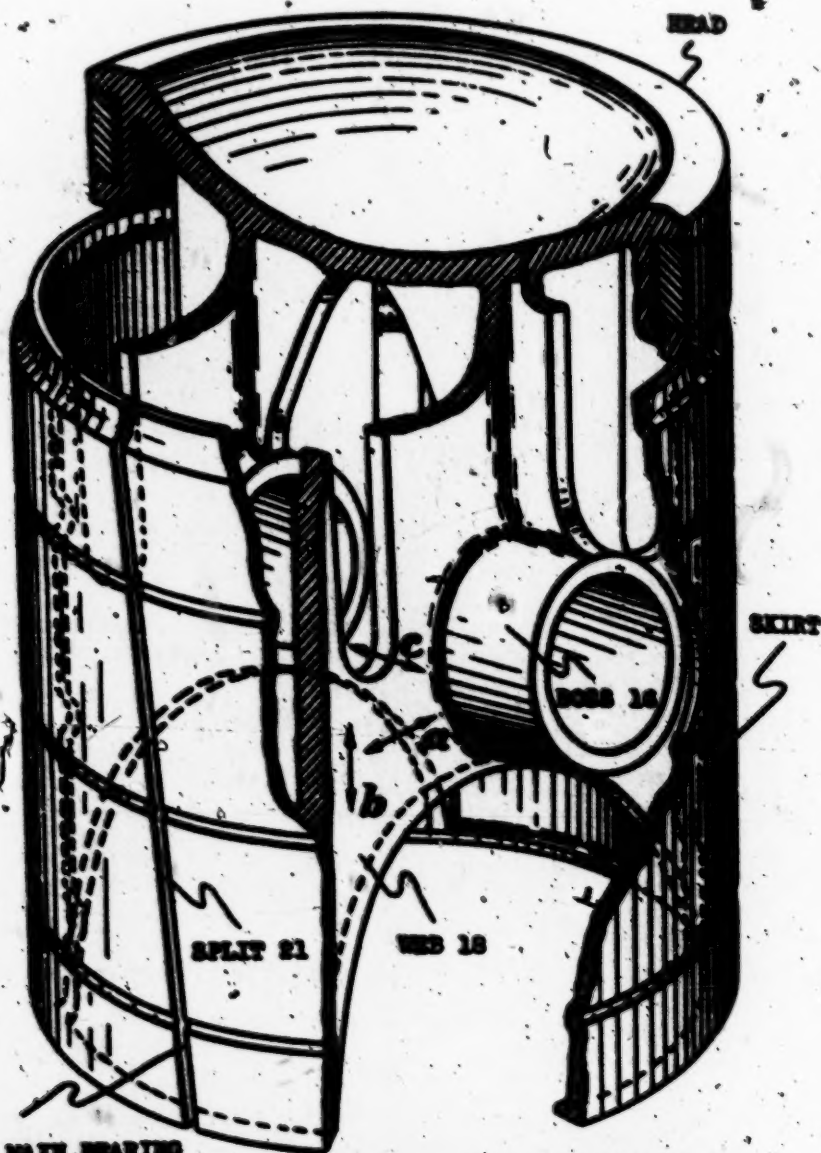


MAIN THRUST BEARING FACE

SECTION OF EBS PISTON ABOVE WRIST PIN BOSS.

Solid metal connection between main thrust bearing faces makes piston rigid. Skirt is split in axis of wrist pin boss, not in main bearing face.

PLIT



GUIDE OR MAIN BEARING
PORTION OF SKIRT SPLIT
FROM TOP TO BOTTOM AT
21 SO THAT SKIRT WILL
NOT "SEIZE OR STICK"
IN THE CYLINDER.

ARROWS "a" AND "b" SHOW DIRECTION OF
"EXTREMELY RIGID CONNECTION" OF THE
POWER-TRANSMITTING BOSSSES 16 TO THE
SKIRT BY THE WEBS 18. ARROW "c" SHOWS
DIRECTION OF "LATERAL FLEXIBILITY"
(ADDED BY AMENDMENT) OF THE WEBS 18.

VIEW OF GULLUCK PISTON IN PERSPECTIVE.

SUPREME COURT OF THE UNITED STATES.

Nos. 3, 4, 5.—OCTOBER TERM, 1938.

The Schribner-Schroth Company,
Petitioner,

3 vs.
The Cleveland Trust Company, Chrysler Corporation.

The Aberdeen Motor Supply Company,
Petitioner,

4 vs.
The Cleveland Trust Company, Chrysler Corporation.

The F. E. Rowe Sales Company,
Petitioner,

5 vs.
The Cleveland Trust Company, Chrysler Corporation.

On Writs of Certiorari to
the United States Circuit Court of Appeals
for the Sixth Circuit.

[November 7, 1938.]

Mr. Justice STONE delivered the opinion of the Court.

The principal question for decision is whether the court below rightly sustained the validity of two patents by including in the combination constituting the alleged invention of each an element which was not in terms described in one, and the description of which in the other was added only by amendment to the application after it was filed.

"Respondent, the Cleveland Trust Company, is the assignee in trust of some eighty patents relating to pistons of the type employed in internal combustion engines for automobiles, under a pooling agreement to which an automobile manufacturer and a number of manufacturers of pistons are parties."

was tried before a special master who, upon the basis of elaborate findings, held that the Gulick patent, No. 1,815,733, applied for November 30, 1917 and allowed July 31, 1931, was invalid for want

2 *Schreiber-Schroth Co. vs. Cleveland Tr. Co., Chrysler Corp.*

of invention and because of the addition to the application by amendment in 1922 of a new element of the alleged invention. In reaching this conclusion he relied on this Court's decisions in *Powers-Kennedy Co. v. Concrete Co.*, 282 U. S. 175 and *Permutit v. Graver Corporation*, 284 U. S. 52, as inconsistent with the result of interference proceedings in which Gulick's amendments were sustained, *Long v. Gulick*, 17 F. (2d) 686, *Hartog v. Long*, 47 F. (2d) 369. The master also held that the Maynard patent No. 1,655,968, applied for January 3, 1921 and allowed January 10, 1928, was invalid for want of invention and for failure to describe and claim the alleged invention. He held invalid upon various grounds the other patents, which are not presently involved.

The District Court adopted the findings and conclusions of the master and gave its decree for petitioners. The Court of Appeals for the Sixth Circuit reversed, as to the Gulick and Maynard patents only, holding that they were valid and infringed. 92 F. (2d) 330.¹ As the court regarded the claims which it sustained as basic and thought that a full recovery could be had by respondent under them, it did not pass upon the validity of the other patents or decide other questions involved in the appeal.

Petition for certiorari raising the question, among others, whether the Court of Appeals had erred in holding patentable a combination including one element not described in the original application for the Gulick patent and later added to it by amendment, and not described at all in the Maynard patent, was at first denied, there being no conflict of decision. 308 U. S. 639. We later granted certiorari, — U. S. —, on a petition for rehearing showing that, notwithstanding the doubtful validity of the patents, litigation elsewhere with a resulting conflict of decision was improbable because of the concentration of the automobile industry in the sixth circuit. Cf. *Paramount Publix Corp. v. American Tri-Ergon Corp.*, 294 U. S. 464; *Altoona Publix Theatres, Inc. v. American Tri-Ergon Corp.*, 294 U. S. 477.

It is important for the proper functioning of the piston in a gas engine that it should fit the explosion chamber closely so as to conserve power, prevent the passage of lubricating oil around the piston into the chamber, and insure the smooth and noiseless move-

¹ The decree sustained Gulick's claims numbered 1, 11, 12, 13, 15, 18, 30 and 33, and Maynard's claims numbered 1, 6 and 8.

ment of the piston within the cylinder. In designing gas engines for automobiles and other purposes requiring a high speed piston reciprocation with the accompanying development of high temperature in the explosion chamber, it is desirable to avoid thermal expansion of the close fitting piston, which will result in loss of power and possible injury to the mechanism through increased friction, which may cause the piston to seize or stick. The danger of undue expansion is increased when, as is advantageous in automobile engines, the piston is of aluminum, which has a higher coefficient of expansion than the iron or steel chamber within which the piston moves.

Both the Gulick and Maynard patents are for combinations in the structure of a piston for gas engines designed to prevent or restrict undue expansion of the piston when in operation. The Gulick patent exhibits a piston in which the ring-carrying head is separated by an air space at its periphery from the cylindrically shaped skirt or guide wall, whose surface engages the inner surface of the cylinder. The piston head and skirt are connected by two "webs" or walls extending longitudinally through the interior of the skirt. The webs are pierced at right angles for wrist pin bearings and support, at the bearings, piston pin bosses formed with integral flanges extending laterally from their respective bosses to form the webs, which in turn are integrally connected on either side with the interior wall of the lower part of the skirt and at their ends with the piston head. The skirt is longitudinally split on one side at a point in its circumference approximately midway between the pin bosses, with the edges of the skirt formed by the split separated so as to admit of the free movement of the edges toward each other.

The structure is thus designed to minimize the expansion resulting from high temperatures developed in the chamber and to avoid the effects of thermal expansion of the skirt. The webs, which afford at the wrist pin bearings the means for connecting the piston rod with the piston, serve to hold the head and skirt in proper relation to each other so that the air space between them retards flow of heat from the head to the skirt, undue expansion of the skirt, and the consequent increase of friction between piston and enveloping cylinder. Undue expansion of the piston is said by the patent's specifications to be avoided by the separation of the skirt by the longitudinal split in order to admit of unrestrained move-

ment of the edges of the skirt toward each other. Elsewhere they state that "when the longitudinal split is used, as shown, the web structure has sufficient lateral flexibility to permit the split to close more or less under the action of the expansion forces incident to the heating of the piston."

The elements of the combination as enumerated in Claim 39 are: "A piston, open at one end, for an engine cylinder comprising a skirt and head separated from the skirt wall around its entire periphery, said skirt being longitudinally split to render the skirt wall yieldable on every diameter in response to cylinder wall pressure, wrist pin bosses, and means rigidly connecting said bosses to the head and yieldingly connecting said bosses to the skirt whereby said skirt is yieldable in response to cylinder wall pressure."

"Reference to a combination including, with other elements, web connections, 'whereby said piston skirt is rendered yieldable during operation in response to cylinder wall pressure,' appears in Claim 18."

by an air space, the two being connected by webs supporting wrist pin bearings with bosses which do not come directly in contact with the walls of the skirt, was plainly foreshadowed by the prior art as a practicable means of minimizing the flow of heat from head to skirt and of securing lateral flexibility in the skirt. The expired Spillman and Moore patent No. 1,002,870, of April 14, 1914, pooled with the patents in suit, showed a piston with head separated by an air space from the skirt, the two being connected by a web separated from the skirt except at the point of integral connection with it at the lower end of the cylinder, and providing bearings for a wrist pin connection with bosses not in direct contact with the wall of the skirt.

Flexibility of the skirt attained by longitudinal splits was old, as shown by the Ebbs patent No. 700,309 of 1902, and Van Bever, No. 1,031,212 of 1912. The Franquist piston, patent No. 1,153,902 of 1915, another of the pooled patents, which showed piston head partially separated from skirt by air spaces, attained flexibility of the piston wall by longitudinal grooves in the skirt which interrupted its outer periphery though connected at the inner edges of the groove by a fold of the metal on the accordion principle. The Long piston, patent No. 1,872,772 of 1932, which the master and the district court found was in commercial use from 1917 on, and before the amendment of the Gulick application, presently to be dis-

cussed, showed longitudinal slits cut through the skirt, which was separated by air spaces from the piston head, the two being connected by parallel webs pierced for wrist pin bearings.

The court below found invention in the Gulick disclosure in a combination of elements, of which one was webs "laterally flexible", which were not specifically so described in the Gulick application until the amendment of 1922. Conceding that the deceleration of the flow of heat from head to skirt by an air gap might be an obvious expedient of the art, and that to slit the skirt vertically so as to compensate for thermal expansion might not be beyond the skill of the art, the court added: "But to combine insulation of head from skirt, retraction of the bosses from the skirt periphery, connection of such bosses to the skirt with webs laterally flexible and yet so carried from the head as to support the load upon the wrist pin with sufficient strength and rigidity and to utilize the mechanical force of the cylinder wall upon the skirt and the thermal expansion of the bosses so as to compensate evenly and fully for head expansion and to secure a balanced flexibility of the skirt with no bending concentration at any point therein, discloses we think a meritorious concept beyond the reach of those skilled in the art." 92 F. (2d), at 334.

We can find no support in the opinion for the contention of respondent that the Circuit Court of Appeals did not consider the flexible web an essential element in Gulick's invention. Its enumeration, among other named elements, of the connection of head and skirt by webs laterally flexible as embodying a meritorious concept must be taken to indicate that the court regarded the flexible webs as a part of the invention, the more so since it indicates that lateral flexibility of the webs is the only feature mentioned not within the prior art or within the expected skill of the art. It rejected, on the authority of *Long v. Gulick*, *supra*, and *Hartog v. Long*, *supra*, the contention made below and pressed here that Gulick's application as filed did not disclose "webs laterally flexible" and the resultant "balanced flexibility of the skirt," and that those features were added to specifications and claims after the use of the Long piston and after they had appeared in Hartog.

The Gulick application, which was filed November 30, 1917, contained no reference in terms to laterally flexible webs or to the function of the webs in securing flexibility of the skirt. The

specifications pointed to no inadequacy in the structure or function of webs of the prior art which would be remedied by the webs specified and to no function to be performed by them other than as a means of connecting and holding head and skirt so as to maintain the air gap between them and to support the wrist pin bearings and their bosses as both were shown in Spillman and Mooers. On the contrary, Gulick's application described the webs as "extremely rigid" and stated that an object of the invention was "to rigidly support the piston pin bosses of a piston from the piston walls." The only description of the web structure was as follows:

"It will be seen that in addition to providing a piston with a split skirt the above described construction also provides an extremely rigid connection between the piston pin bosses and the skirt of the piston, which construction may be used either with or without the split skirt and separated head. The arrangement of the supporting flanges 17 between the ends of the piston pin bosses and the connection of those flanges with the piston skirt provide a particularly strong support for the bosses."

The webs as shown by the drawings conform to the specifications of an "extremely rigid connection" between piston pin bosses and skirt and "a particularly strong support for the bosses." They form chords subtending the arc of the circle of the skirt, with flanges depending from the head to the bosses at right angles to the webs, and the skirt as shown is provided with interior corrugations and with an intumed flange at the bottom, all familiar devices for securing rigidity of structure. Neither drawings nor specifications give dimensions showing thickness or other proportions which might suggest a flexible structure.

In 1922, after the Long piston, whose webs concededly were laterally flexible, was in commercial use, and Hartog, to the knowledge of Gulick's assignee, had specified and claimed a yieldable web, Gulick copied the Hartog claim and amended his specifications so as to state that one of the objects of his invention was "to rigidly support the piston pin bosses of a piston from the piston wall against mechanical load thrust from the connecting rod without interfering with the yielding characteristics of the skirt in response to cylinder wall pressure." And he amended his description of the web structure to read:

"The arrangement of the supporting flanges 17 between the ends of the piston pin bosses and the connections of those flanges with both the piston guide portion and the head provide a particularly strong construction, and at the same time, when the longitudinal

split is used, as shown, the web structure has sufficient lateral flexibility to permit the split to close more or less under the action of the expansion forces incident to the heating of the piston."

Petitioners insist that the flexible web element of the Gulick combination, as found and sustained by the court below, is excluded from the Gulick patent by reason of his failure to describe that element in his application as filed and that he could not cure the omission and secure a patent embodying that feature by substituting by way of amendment "webs laterally flexible" for "extremely rigid webs" in the description of his invention. The statute, R. S. §4888, provides that the application which the inventor must file as a prerequisite to a patent shall contain "a written description of [his invention] . . . and of the manner and process of making, constructing . . . and using it in such full, clear, concise, and exact terms as to enable any person skilled in the art . . . to . . . construct . . . and use the same; and in case of a machine, he shall explain the principle thereof, and the best mode in which he has contemplated applying that principle, so as to distinguish it from other inventions. . . ."

The object of the statute is to require the patentee to describe his invention so that others may construct and use it after the expiration of the patent and "to inform the public during the life of the patent of the limits of the monopoly asserted, so that it may be known which features may be safely used or manufactured without a license and which may not." *Permutit Co. v. Graver Corporation*, 284 U. S. 52, 60. It follows that the patent monopoly does not extend beyond the invention described and explained as the statute requires, *Permutit Co. v. Graver Corporation*, *supra*, at 57; that it cannot be enlarged by claims in the patent not supported by the description, *Snow v. Lake Shore Railway*, 121 U. S. 617; cf. *Smith v. Snow*, 294 U. S. 1; and that the application for a patent cannot be broadened by amendment so as to embrace an invention not described in the application as filed, at least when adverse rights of the public have intervened. *Railway Co. v. Sayles*, 97 U. S. 554, 563, 564; *Powers-Kennedy Co. v. Concrete Co.*, 282 U. S. 175, 185-186; cf. *Webster Electric Co. v. Spliendorf Electrical Co.*; 264 U. S. 463; *Permutit Co. v. Graver Corporation*, *supra*; *Crown Cork & Seal Co. v. Gutmann Co.*, 304 U. S. 159.

Respondent earnestly argues, as both courts held in the interference proceedings, *Long v. Gulick*, *supra*, and *Hartog v. Long*,

supra, that the changes in Gulick's application were not alterations in the description of his invention but were at most a permissible clarification of its description of the flexible web element which was present, or at least plainly suggested, in the specifications and drawings of the Gulick application. Flexibility, it is said, as is well known to those skilled in the art, is an inherent property of the metal out of which the webs are made, and in consequence reference to the webs in the application as filed was sufficient to import into it as a part of the description of the invention their known quality of flexibility, a description which was made more specific, but not altered, by the amendments. The argument suggests that it was but the skill of the art, and not invention, to substitute a flexible for a rigid means of connecting head and skirt in a known combination of piston head separated from a slitted skirt by an air space and connected by webs. But in any case we think it falls short of establishing that the Gulick amendments were not new matter beyond the scope of the device described in the application as filed.

The properties of any given material are many and diverse. The antithetical qualities of rigidity and flexibility of a structure are not absolute but relative; it may be more rigid than some and more flexible than others; too rigid for some purposes and too flexible for others. The one quality may be increased and the other diminished by choice of materials from which the structure is made and by variation in its proportions. If invention depends on emphasis of one quality over the other, as the court below found was the case with the laterally flexible webs in the Gulick device, the statute requires that emphasis to be revealed to the members of the public, who are entitled to know what invention is claimed. That is not accomplished either by naming a member having inherent antithetical properties or by ascribing to it one property when the other is meant. Since rigidity is a relative term, the characterization of the structure as rigid must be taken as emphasizing rigidity rather than its opposite, flexibility, with special reference to the conditions to be encountered in the operation of the piston. Even if those skilled in the art would have known that a piston with webs which would yield enough laterally to accommodate the constriction of the split skirt under the pressure developed by thermal expansion would work most effectively if the webs were laterally flexible rather than rigid, that was not the inven-

tion which Gulick described by his references to an extremely rigid web.

Gulick also failed to explain the principle of his machine so as to distinguish it from the prior art. Webs having the inherent properties both of rigidity and flexibility were familiar elements in piston structure. The court below, after pointing out that the slots of the Franquist skirt rendered it capable of limited constriction, found a distinguishing feature of Gulick's piston to be a web relatively flexible laterally, so as to accommodate the constriction of skirt to thermal expansion, the combination operating to secure a "balanced flexibility" of the skirt. But that principle—facilitating skirt constriction rather than obstructing it—was first explained and its embodiment in the flexible-webbed device was first claimed by the amendments to the application.

As already indicated, the omission from the specifications was not supplied by the drawings, which failed to disclose by dimensions the proportions of the webs. Inherent flexibility of the web in cooperation with the slit skirt cannot be depended upon to produce the desired effect in rendering the skirt yieldable in response to cylinder wall pressure. As respondent's own expert testified, that depends upon design of the web, with correct proportioning of the different parts as to location and thickness to produce lateral flexibility. Inherent rigidity, made more effective by design of the webs, would correspondingly curtail the desired effect.

We recognize the weight to be attached to the determinations in the interference proceedings in which the Court of Appeals of the District of Columbia and the Court of Customs and Patent Appeals sustained the Gulick amendments. Cf. *Radio Corporation v. Radio Laboratories*, 293 U. S. 1, 7. But the decisions in those cases are not controlling here. So far as the courts relied on the inherent flexibility of the webs to supply the feature of lateral flexibility omitted from the Gulick description they ignored the principle recognized in *Permutit v. Grover Corporation*, *supra*, and *Powers-Kennedy v. Concrete Co.*, *supra*. So far as they relied on the drawings to supply the omission they disregarded the fact shown both by inspection and by the evidence presented here that the drawings do no more to point to Gulick's invention than does the fact of inherent flexibility. We conclude that respondent can take no benefit from the flexible web element added by amendment to the Gulick application.

In sustaining the claims of the Maynard patent the court below said that "Maynard . . . embodies the Gulick combination of skirt insulation, skirt flexibility by means of vertical slotting co-operating with longitudinal slotting, and flexible webs in the region of the wrist pin bosses. He also follows Jardine's simplified design to permit economical manufacture and Jardine's boss relief", and after enumerating certain mechanical features of the Maynard construction differing from Gulick and Jardine, concluded: "It is clear that Maynard, while not departing from the teaching of Gulick in basic combination of elements, discloses a piston lighter and more economical of manufacture than Gulick and one more rugged and durable than Jardine." 92 F. (2d), at 337.

Invention over Gulick and Jardine was apparently found in the details of construction but, as we are without other indication of the character of the invention, we construe the court's opinion as including the laterally flexible webs as an essential element in the patented combination. As flexible webs are neither described in Maynard's specifications nor mentioned in his claims, they can be imported into them only by reference to the drawings or by inference from the inherent flexibility of the structure, which, for reasons already given in our consideration of the Gulick amendments, are insufficient to accomplish that result. We conclude that the court below erred in giving any effect to so much of the Gulick patent as by amendment describes or claims the flexible webs, and in treating any of the specifications or claims in Gulick and Maynard as referring to such webs. We assume that it sustained Claim 1 of the Gulick patent, which makes no mention of web flexibility, only by reading into it that element, which the court regarded as an essential part of the invention.

As the Court of Appeals did not pass upon other questions in the case, the cause will be reversed and remanded to it for further proceedings, in conformity with this opinion, with respect to such claims of the patents in suit as appellant below submitted to that court for adjudication.

Reversed.

Mr. Justice ROSENBERG took no part in the consideration or decision of this case.